Avaya Aura® Core Solution Description

Release 6.3
Issue 1
June 2014

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Contents

Chapter 1: Introduction

Purpose

This document describes an Avaya solution from a holistic perspective focusing on the strategic, enterprise, and functional views of the architecture. This document also includes a high-level description of each verified reference configuration for the solution.

Intended audience

This document is intended for people who want to understand how the solution and related verified reference configurations meet customer requirements.

Related resources

Documentation

Document number	Title	Use this document to:	Audience
Overview			
555-245-207	*Avaya Aura® Communication Manager Hardware Description and Reference*, 555-245-207	Know about the hardware components that Communication Manager supports.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel

Document number	Title	Use this document to:	Audience
03-603978	*Avaya Aura® Solution Design Considerations and Guidelines*	Understand the Avaya Aura® solution, IP and SIP telephony product deployment, and network requirements for integrating IP and SIP telephony products with an IP network.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
03-300468	*Avaya Aura® Communication Manager Overview and Specification*	Understand the characteristics and capabilities of the product , including product feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Anyone who wants to gain a high-level understanding of the product feature, functions, capacities, and limitations.
	Avaya Aura® Session Manager Overview and Specification	Understand the characteristics and capabilities of the product , including product feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Anyone who wants to gain a high-level understanding of the product feature, functions, capacities, and limitations.
	Avaya Aura® System Manager Overview and Specification	Understand the characteristics and capabilities of the product , including product feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Anyone who wants to gain a high-level understanding of the product feature, functions, capacities, and limitations.
	Avaya Aura® Presence Services Overview and Specification	Understand the characteristics and capabilities of the product , including product feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Anyone who wants to gain a high-level understanding of the product feature, functions, capacities, and limitations.

Document number	Title	Use this document to:	Audience
	Avaya Aura® Application Enablement Services Overview and Specification		
Implementing			
	Upgrading Avaya Aura® System Manager to 6.3.4	Upgrade the earlier releases to Release 6.3.4 on System Platform	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
	Upgrading Avaya Aura® System Manager to Release 6.3.4 on VMware®	Upgrade the earlier releases to Release 6.3.4 on VMware.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
	Upgrading Avaya Aura® Session Manager	Upgrade the earlier releases to Release 6.3.4.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
	Upgrading to Avaya Aura® Communication Manager Release 6.3	Upgrade the earlier releases to Release 6.3.2	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
	Deploying Avaya Aura® Presence Services	Install, configure, and upgrade Presence Services.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel

Document number	Title	Use this document to:	Audience
	Implementing Avaya Aura® Application Enablement Services in a Software-Only Environment	Install, configure, and upgrade Application Enablement Services.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
	Avaya Aura® Virtualized Environment Solution Description	Understand the Avaya Aura® Virtualized Environment solution and its verified configurations.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
Using			
555-233-504	*Administering Network Connectivity on Avaya Aura® Communication Manager*, 555-233-504	Administer the network components of Communication Manager.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel
03-300509	*Administering Avaya Aura® Communication Manager*, 03-300509	Administer Communication Managercomponents, such as trunks, signalling groups, and dial plans. Set up telephony features, such as conferencing, transfer, and messaging.Communication Manager.	Solution Architects, Implementation Engineers, Sales Engineers, Support Personnel

Training

The following courses are available on the Avaya Learning website at www.avaya-learning.com. After logging into the website, enter the course code or the course title in the **Search** field and click **Go** to search for the course.

Course code	Course title
Avaya Aura® core implementation	

Course code	Course title
1A00234E	Avaya Aura® Fundamental Technology
4U00040E	Avaya Aura® Session Manager and System Manager Implementation
4U00030E	Avaya Aura® Communication Manager & CM Messaging Implementation
10U00030E	Avaya Aura® Application Enablement Services Implementation
8U00170E	Avaya Aura® Presence Services Implement and Support
AVA00838H00	Avaya Media Servers and Media Gateways Implementation Workshop
ATC00838VEN	Avaya Media Servers and Gateways Implementation Workshop Labs
Avaya Aura® core support	
5U00050E	Session Manager and System Manager Support
5U00060E	ACSS - Avaya Aura® Communication Manager and CM Messaging Support
4U00115I 4U00115V	Avaya Aura® Communication Manager Implementation Upgrade (R5.x to R6.x)
1A00236E	Avaya Aura® Session Manager and System Manager Fundamentals
Avaya Aura® core administration and maintenance	
9U00160E	Avaya Aura® Session Manager for System Administrators
1A00236E	Avaya Aura® Session Manager and System Manager Fundamentals
5U00051E	Avaya Aura® Communication Manager Administration
5M00050A	Avaya Aura® Communication Manager Messaging Embedded Administration, Maintenance & Troubleshooting

Viewing Avaya Mentor videos

Avaya Mentor videos provide technical content on how to install, configure, and troubleshoot Avaya products.

About this task

Videos are available on the Avaya Support web site, listed under the video document type, and on the Avaya-run channel on YouTube.

- To find videos on the Avaya Support web site, go to http://support.avaya.com, select the product name, and select the *videos* checkbox to see a list of available videos.
- To find the Avaya Mentor videos on YouTube, go to http://www.youtube.com/AvayaMentor and perform one of the following actions:

- Enter a key word or key words in the Search Channel to search for a specific product or topic.
- Scroll down Playlists, and click the name of a topic to see the available list of videos posted on the site.

Note:

Videos are not available for all products.

Product compatibility

For the latest and most accurate compatibility information, go to http://support.avaya.com/CompatibilityMatrix/Index.aspx.

Support

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Chapter 2: Solution overview

Avaya Aura® overview

Avaya Aura® is the flagship communications solution that uses an IP and SIP-based architecture to unify media, modes, networks, devices, applications, and real-time, actionable presence across a common infrastructure. This architecture provides on-demand access to advanced collaboration services and applications that improve employee efficiency. Avaya Aura® is available in prepackaged software editions and Avaya Aura® Suite licensing bundles, with licenses based on the number of users. The prepackaged software editions are Standard Edition and Enterprise Edition. Avaya Aura® Suite licensing is the new software licensing model that provides customers the flexibility to mix and match license types in any quantity or combination. For more information, see Avaya Aura Licensing on page 14.

The Avaya Aura® solution provides the following capabilities:

- Support for up to 10 instances of Session Manager and 100,000 SIP users
- Support for up to 36,000 SIP endpoints on a single Communication Manager server
- Converged voice and video call admission control
- SIP features, including E911, which reports the desk location of the caller
- Communication Server 1000 SIP networking and feature transparency
- Session Manager SIP routing adaptations
- A central management application, System Manager, for all Avaya Aura® applications and Avaya Communication Server 1000, with single authentication
- Support for two virtualization platforms: System Platform and VMware ESXi. System Platform is the proprietary virtualization platform from Avaya and VMware ESXi is a third-party virtualization platform from VMware, Inc.

Avaya Aura® licensing

The new Avaya Aura® Suite Licensing comprises three licensing packages: Foundation Suite, Mobility Suite, and Collaboration Suite. Customers purchase the number of licenses of each suite based on the communication requirements of the enterprise users. Customers have the flexibility to mix and match license types in the required quantity or combination. For example,

customers who require reliable survivability options and advanced video features can purchase licenses for the features from the foundation and the collaboration suites.

Foundation Suite Provides the necessary elements for the Avaya Aura® core infrastructure for soft clients, desktop UC integration, and core applications survivability.

Mobility Suite Provides network connectivity without VPN and advanced messaging capabilities through cellular devices. In addition to Foundation Suite licenses, Mobility Suite includes the following mobility applications:

- Avaya Aura® Messaging
- Avaya Session Border Controller for Enterprise
- Avaya Flare® Communicator for iPad Devices
- Avaya one-X® Mobile for SIP, iOS, Android, and Windows smartphones

Collaboration Suite Provides robust collaboration capabilities, including advanced HD video, audio, and web conferencing features. In addition to Foundation Suite and Mobility Suite licenses, Collaboration Suite includes Avaya Aura® Conferencing and Scopia® desktop licenses.

The new suites replace the Standard and Enterprise Editions of Avaya Aura® solutions.

Product	Standard	Enterprise	Foundation Suite	Mobility Suite	Collaboration Suite
Avaya Agile Communication Environment™	Y	Y	Y	Y	Y
Avaya Aura® Communication Manager	Y	Y	Y	Y	Y
Avaya Aura® Communication Manager Messaging	Y	Y	Y	Y	Y
Avaya Flare® Experience for PC	N	N	Y	Y	Y
Avaya one-X® Communicator	N	Y	Y	Y	Y
Point-to-point video	N	N	Y	Y	Y
Avaya Aura® Presence Services	N	Y	Y	Y	Y
Avaya Aura® Session Manager	N	Y	Y	Y	Y

Product	Standard	Enterprise	Foundation Suite	Mobility Suite	Collaboration Suite
Avaya Aura® System Manager	Y	Y	Y	Y	Y
Avaya Aura® System Platform	Y	Y	Y	Y	Y
Avaya Aura® Messaging	N	N	N	Y	Y
Avaya Flare® Experience for iPad	N	N	N	Y	Y
Avaya one-X® Mobile	N	N	N	Y	Y
Avaya Session Border Controller for Enterprise	N	N	N	Y	Y
EC500 (Extension to Cellular)	N	Y	N	Y	Y
Avaya Aura® Conferencing	N	N	N	N	Y
Avaya Client Applications (ACA) for Microsoft OCS and Lync integration	Y	Y	Y	Y	Y
Scopia Desktop/Mobile	N	N	N	N	Y

For more information about the new Avaya Aura® Suite Licensing, contact your Avaya Partner or Avaya Account Representative.

Avaya Aura® Release 6.2 products use the Product Licensing and Delivery System (PLDS) for license administration. For more information about PLDS, including training, documentation, and job aids, see http://plds.avaya.com/.

Avaya Aura® core components

Avaya Aura® contains the following core components:

- Avaya Aura® System Manager
- Avaya Aura® Session Manager
- Avaya Aura® Communication Manager
- Avaya Aura®Application Enablement Services
- Avaya Aura® Presence Services

- G250, G350, G430, and G450 Branch Gateways
- Avaya Aura® System Platform

System Manager overview

System Manager is a central management system that delivers a set of shared management services and provides common console for Avaya Aura® applications and systems.

System Manager includes the following shared management services:

Service	Description
Users	Provides features to administer users, shared address, public contact list, and system presence access control list information. You can: • Associate the user profiles with groups, roles, and communication profiles. • Create a contact list. • Add an address and private contacts for the user.
User Provisioning Rules	Provides features to create rules called user provisioning rules. When the administrator creates the user using the user provisioning rule, the system populates the user attributes from the rule. The administrator requires to provide minimal information.
Bulk import and export	Provides features for bulk import and export of user profiles and global settings.
Directory synchronization	Provides features for bidirectional synchronization of user attributes from System Manager to the LDAP directory server.
Elements	Provides features by individual components of System Manager. Some links also provide access to generic features of System Manager, most of the links provide access to features provided by different components of System Manager.
Events	Provides features for administering alarms and logs generated by System Manager and other components of System Manager. Serviceability agent sends alarms and logs to SAL Gateway and System Manager, which in turn forwards the alarms and logs to the Avaya Data Center. You can view and change the status of alarms. You can view logs and harvest logs for System Manager and its components and manage loggers and appender.
System Manager Geographic Redundancy	Provides features for handling scenarios when the primary System Manager server fails or the data network fragments. In such scenario, the system manages and administers elements such as Avaya Aura® Session Manager and Avaya Aura® Communication Manager, across

Service	Description
	the customer enterprise using the secondary System Manager server.
Groups & Roles	Provides features for administering groups and roles. You can create and manage groups, roles, and permissions.
Licenses	Provides features for administering licenses for individual components of Avaya Aura® Unified Communication System.
Security	Provides features for configuring the certificate authority.
System Manager Data	Provides features for: • Backing up and restoring System Manager configuration data. • Monitoring and scheduling jobs. • Replicating data from remote nodes. • Configuring data retention settings and profiles for various services that System Manager provides.
Tenant Management	Provides features for: • Creating a tenant. • Editing tenant details. • Duplicating an existing tenant. • Deleting a tenant.
Software Management	Provides features for: • Obtaining the latest software and upgrading the Avaya devices. • Downloading the new release from Avaya PLDS and using for upgrading the device software.

For more information about System Manager, see *Avaya Aura® System Manager Product Overview and Specification*.

Session Manager overview

Session Manager is a SIP routing and integration tool that integrates all SIP devices across the enterprise and leverages the existing infrastructure.

Features

Session Manager:

- Integrates with third-party equipment and endpoints.
- Routes calls by using an enterprise-wide numbering plan.
- Communicates with Session Border Controller to protect the enterprise network

- Centralizes Presence Services, thus, reduces network complexity with endpoints and communication servers.
- Interconnects with Communication Manager and Avaya Communication Server 1000 to provide feature support for SIP and non-SIP endpoints.

Advantages

Session Manager provides the following advantages:

- Business agility through holistic enterprise architectures to connect users, applications, and solutions from multiple vendors.
- Cost savings from SIP connectivity and centralized routing.
- Lower cost of ownership with the use of a centralized, easy-to-use management interface.
- Deployment of central applications at an enterprise level.
- Scalability support for global deployments.
- Strong reliability, security, and redundancy support.

For more information about Session Manager, see *Session Manager Product Overview and Specification*.

Communication Manager overview

Communication Manager is an extensible, scalable, and secure telephony application that connects to private and public telephone networks, Ethernet LANs, and the Internet. Communication Manager organizes and routes voice, data, image, and video transmissions.

With the Communication Manager Release 6.3.6 security service patch, you can receive and validate the certificate that uses the SHA-2 signing algorithm and 2048 bit RSA keys. Using Communication Manager System Management Interface, you can import the third-party trusted certificate that uses the SHA-2 signing algorithm.

Note:

To obtain the security service pack details, go to the Avaya Support website at http://support.avaya.com.

For information about certificates, see *Avaya Aura® Communication Manager Security Design*, 03-601973 and *Administering Avaya Aura® Communication Manager*, 03-300509.

Key features

- Robust call processing capabilities
- Application integration and extensibility
- Advanced workforce productivity and mobility features
- Built-in conferencing and contact center applications

- E911 capabilities
- Centralized voice mail and attendant operations across multiple locations
- Connectivity to a wide range of analog, digital, and IP-based communication devices
- Support for SIP, H.323, and other industry-standard communications protocols over different networks
- More than 700 powerful features
- High availability, reliability, and survivability

For more information about Communication Manager, see *Avaya Aura® Communication Manager Overview and Specification*.

Application Enablement Services overview

Application Enablement Services is a server-based software solution that provides an enhanced set of telephony application programming interfaces (TAPIs), protocols, Web services, and direct IP access to media. Application Enablement Services also supports Computer Supported Telecommunications Applications (CSTA), Java Telephony API (JTAPI) and Telephony Server API (TSAPI). By integrating Application Enablement Services in the enterprise network with Sametime desktop applications, customers can use the rich click-to-communicate features provided by Avaya products. For example, Microsoft Office Communicator uses Application Enablement Services to place, receive, and control calls from any Avaya IP, digital, analog, or mobile phone that are connected to Communication Manager.

Application Enablement Services runs on a Linux server and functions with Communication Manager and Avaya Contact Center solutions. Application Enablement Services provides an open platform for supporting existing applications and serves as a catalyst for creating new applications and solutions.

Using Application Enablement Services, systems integrators, authorized business partners, third-party independent software vendors (ISVs), and application developers can customize the functions of Avaya communications solutions.

For more information about Application Enablement Services, see *Avaya Aura® Application Enablement Services Product Overview and Specification*.

Presence Services overview

Avaya Aura® Presence Services facilitates the secure exchange of the presence information of telephony and instant messaging (IM) between applications. Presence Services gathers presence information from a diverse range of sources and distributes the information to the presence-aware applications.

Presence Services	Information that conveys the ability and willingness of a user to communicate across a set of applications, such as telephony and instant messaging. The presence state of a user, such as Busy and Away, indicates the availability of the user to communicate with other users.
Presentity	The presence information about a user that the system reports.
Watcher	A user who needs to know the presentity of another user. To receive presence updates for a given presentity, the watcher must subscribe to that presentity.

Applications that need the presence state of a user must first subscribe to Presence Services. If the presence-aware applications use Local Presence Service (LPS) to subscribe to Presence Services, the applications receive presence change notifications. These notifications contain the aggregated presence information of a user and provides visual indications of the presence status to a watcher.

LPS is coresident on the application server. Presence Services uses LPS to efficiently transfer presence information between the Presence Services server and the application servers.

You can deploy Presence Services in one of the following configurations:

- Intra-domain configuration with a shared user database
- Inter-domain configuration with a private user database
- Hybrid configurations, for example, two inter-domain clusters of two servers with one domain server

Note:

Presence Services supports SIP presence on behalf of one or multiple SIP domains and inter-domain federation with the servers that are compatible with XMPP, such as Google Talk

For more information about Presence Services, see *Avaya Aura® Presence Services Product Overview and Specification*.

Branch Gateways

Branch Gateways work with Communication Manager software installed on any of the following servers to help deliver communication services to enterprises:

- S8300D
- S8510
- S8800
- HP ProLiant DL360 G7
- HP DL360 G8

- Dell™ PowerEdge™ R610
- Dell™ PowerEdge™ R620

Branch Gateways connect telephone exchange and data networking by routing data and VoIP traffic over the WAN. Branch Gateways provide support for IP, digital, and analog devices.

Branch Gateways are controlled by Communication Manager operating either as External Call Controller (ECC) or Internal Call Controller (ICC). In a configuration that includes both ICC and ECC, ICC acts as a survivable remote server (SRS). ICC takes over call control when ECC fails or the WAN link between the main office and the branch office is down.

Branch Gateways also provide the standard local survivability (SLS) when the connection to the primary ECC fails. This feature is available only for IPv4 setups.

G430 Branch Gateway

G430 Branch Gateway can support up to 150 users when deployed as a branch gateway in a medium to large enterprise. The configuration requires Communication Manager to be installed on one or more Avaya S8xxx servers, Dell R610, Dell R620, HP ProLiant DL360 G7, or HP DL360 G8 servers.

For more information about G430 Branch Gateway, see *Overview for Avaya G430 Branch Gateway*, 03-603235.

G450 Branch Gateway

G450 Branch Gateway supports up to 450 users in a medium to large enterprise and up to 2400 users when deployed as a campus gateway. Both configurations require Communication Manager on one or more Avaya S8xxx servers, Dell R610, Dell R620, HP ProLiant DL360 G7, or HP DL360 G8 servers.

For more information about G450 Branch Gateway, see *Overview for Avaya G450 Branch Gateway*, 03-602058.

G250 Branch Gateway

G250 Branch Gatewayis a compact, 2U and 19–inch high rack mount unit that includes an IP telephony gateway, an advanced IP WAN router, and a LAN switch.

For a standalone branch solution, the G250 Branch Gateway operates as a standalone gateway with Communication Manager.

G250 Branch Gateway supports small branch offices with a maximum of 12 users and eight stations.

G250 Branch Gatewayis available in four models with port combinations for support of BRI, T1, or E1 trunks and DCP and analog telephones.

The G250 Branch Gateway integrates seamlessly with the following Avaya servers:

- S8800
- S8510
- S8300D
- HP ProLiant DL360 G7
- Dell™ PowerEdge™ R610

Note:

Avaya no longer sells G250 Branch Gateway. Replace G250 Branch Gateway with the new G430 or G450 Branch Gateway.

For more information about , see *Avaya Aura® Communication Manager Hardware Description and Reference*(555-245-207).

G350 Branch Gateway

G350 Branch Gateway is a converged telephony and networking device that provides telephony and data networking infrastructure to small branch locations. G350 Branch Gateway supports up to 72 users and 40 stations. G350 Branch Gateway includes a VoIP engine, WAN router, and Power over Ethernet LAN switch, and supports IP, DCP, and analog telephones.

G350 Branch Gateway integrates with the following Avaya servers:

- S8800
- S8510
- S8300D
- HP ProLiant DL360 G7
- Dell™ PowerEdge™ R610

Note:

Avaya no longer sells G350 Branch Gateway. Replace the gateway with new G430 or G450 Branch Gateway.

For more information, see *Avaya Aura® Communication Manager Hardware Description and Reference* (555-245-207).

Topology

The following graphic depicts the Avaya Aura® architecture and various components of Avaya Aura®.

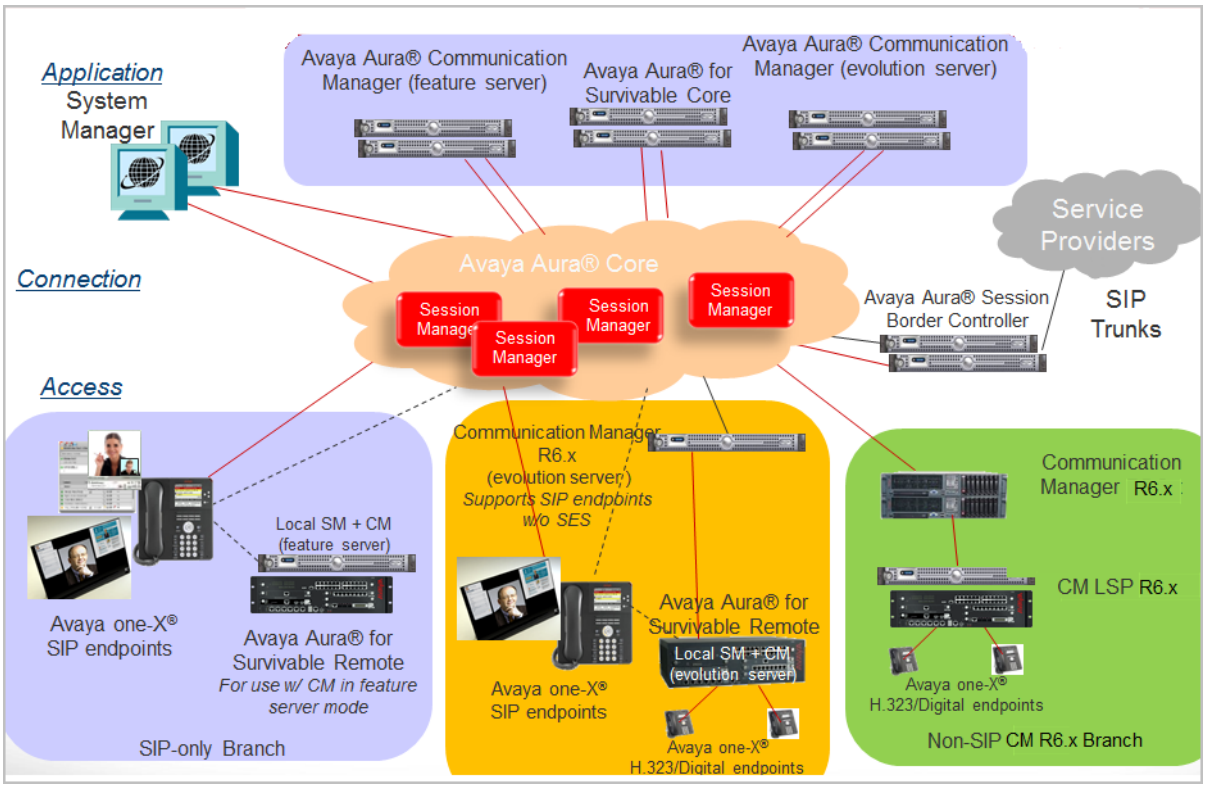


Figure 1: Avaya Aura® Architecture

A standard Avaya Aura® architecture consists the following core components: System Manager, Session Manager, Communication Manager, Application Enablement Services, and Presence Services.

Session Manager provides core SIP routing and integration services that provides communication between SIP-enabled entities, for example, PBXs, SIP proxies, gateways, adjuncts, trunks, and applications across the enterprise. Session Manager uses centralized, policy-based routing to provide integration services. Session Manager sends and receives SIP notifications and SIP Publish messages to and from various endpoints and Presence Services. Configuration of Session Manager is performed from System Manager.

Endpoints registered to Session Manager use Communication Manager Evolution Server for feature support. Endpoints that use H.323 protocol register to Communication Manager over IP. Digital and analog endpoints are directly connected to their respective digital and analog media modules on a Branch Gateway, for example, G450.

Application Enablement Services is a software platform that leverages the capabilities of Avaya Aura® Communication Manager to corporate applications.

By using AE Services, the AES Collector component within Presence Services allows Presence Services to report telephony presence from Communication Manager endpoints. The AES collector collects Presence from H323, DCP, analog, and SIP telephones administered as OPTIM extensions.

Presence Services collects, aggregates, and publishes presence information from and to multiple sources and clients.

System Manager provides a common console to manage the Avaya Aura® applications. System Manager also helps in bulk import and export of users, including user profiles and global settings such as public contacts lists, shared addresses, and presence access control lists.

Avaya Aura® deployment options

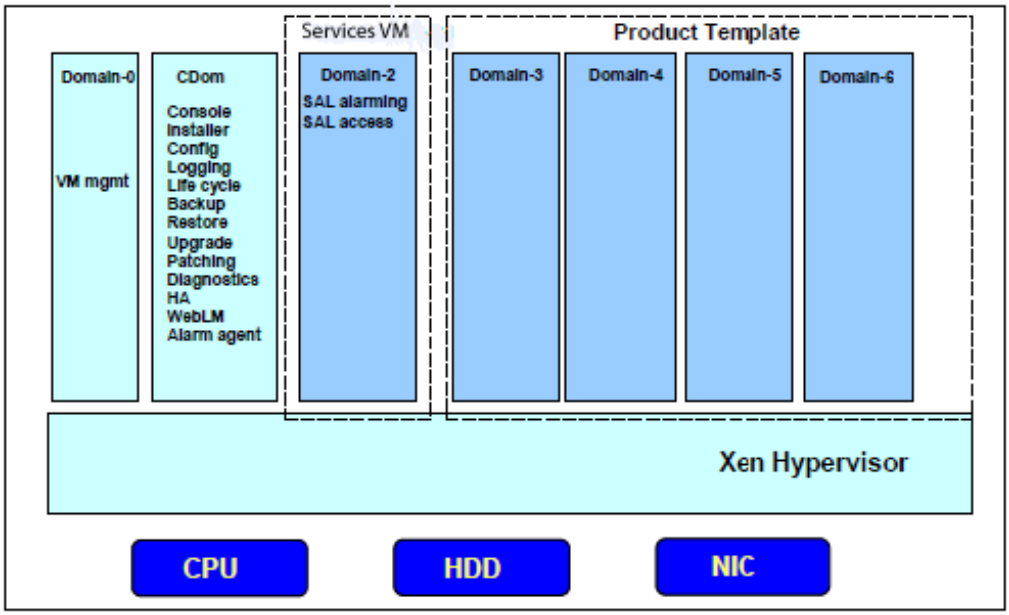
System Platform overview

Avaya Aura® System Platform technology delivers simplified deployment of Unified Communications and Contact Center applications. This framework leverages virtualization technology, predefined templates, common installation, licensing, and support infrastructure.

System Platform:

- is a software platform running CentOS plus Xen open source hypervisor for virtual machine monitoring and management
- hosts one or more Avaya products, each running on its own virtual server (virtual machine), all running on a single physical server platform
- provides a set of utilities commonly required for Avaya products, including installation, upgrade, backup/restore, licensing server, hardware monitoring and alarming, and remote access

The following figure shows an abstraction of the System Platform virtualized environment:



Avaya deploys System Platform through a *virtual appliance* model. The model includes:

- An Avaya-defined common server platform
- An Operating System (O/S) for allocating and managing server hardware resources (CPU, memory, disk storage, and network interfaces) among virtual machine instances running on the server platform
- System Platform
- An Avaya solution template containing a bundled suite of pre-integrated Avaya software applications
- A Secure Access Gateway, supporting a Secure Access Link (SAL) for remote diagnosis by Avaya or an Avaya Partner.

Advantages of System Platform

Advantages of System Platform include:

- Consolidation of servers
- Simpler maintenance
- Faster disaster recovery
- Easy installation of any Avaya Aura® solution template (bundled applications suite) on a single server platform
- Simpler and faster deployment of applications and solutions
- Efficient licensing of applications and solutions
- Security
- Portability of applications
- Reduction of operating costs

- Avaya common look-and-feel Web Console (Web Graphical User Interface) for server, virtual machine, application, and overall solution management.
- Remote access and automated alarm reporting for Network Management Systems monitored by Avaya Services and Avaya Partners personnel
- Coordinated backup and restore
- Coordinated software upgrades

Avaya Aura® Solution for Midsize Enterprise

Avaya Aura® Solution for Midsize Enterprise comprises several Avaya Aura® applications which can be installed on a single server by using the System Platform virtualization technology. The single server uses an installation wizard that reduces the time taken to implement each product on separate servers. This solution provides customers with point-to-point video calling, video conferencing, integrated messaging, and presence services. Midsize Enterprise is for midsize business solutions of 250 to 2400 users and supports Contact Centers with 1000 agents.

Features

Midsize Enterprise provides:

- Mid-sized companies the opportunity to provide employees with advanced and inexpensive video, conference, and collaboration features.
- Large companies the opportunity to try new video, conference, and collaboration features without having to deploy a full-scale model.

Components

The Midsize Enterprise template consists of the following Avaya Aura® applications:

- Communication Manager
- Application Enablement Services
- Communication Manager Messaging
- Presence Services
- Session Manager

For more information, see Avaya Aura® Solution for Midsize Enterprise Description.

Related topics:

Topology on page 27

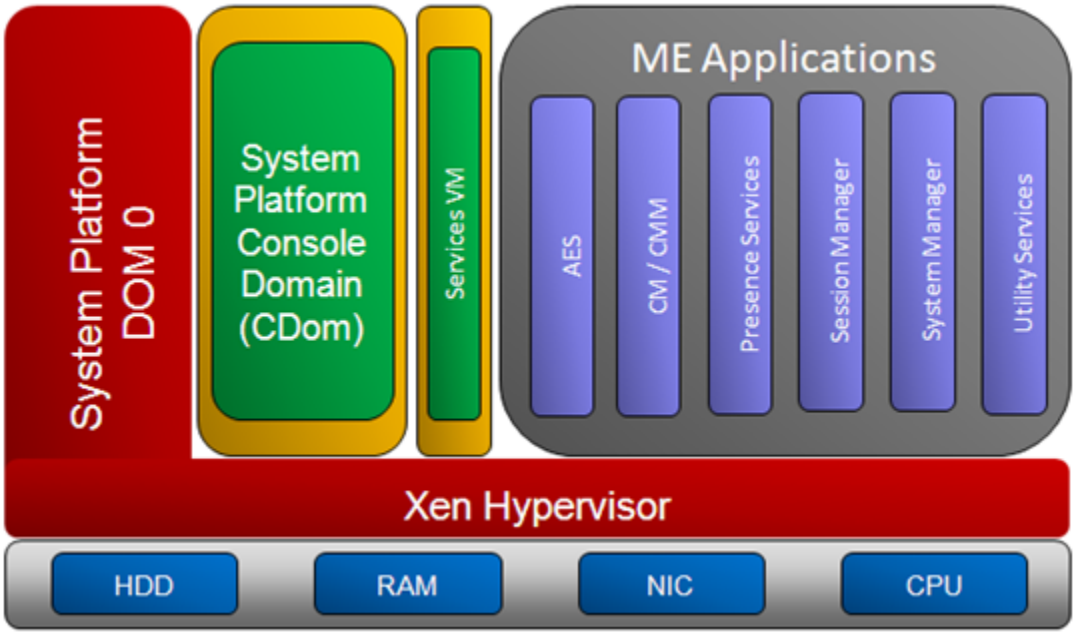
Topology

The Avaya Aura® Solution for Midsize Enterprise is implemented as an Avaya Aura® System Platform template. The template combines various Avaya Aura® applications on a single server.

The Midsize Enterprise template resides on System Platform with the following domains:

- Domain 0: Hypervisor as part of System Platform
- Cdom: System Platform Console Domain
- Services Domain including SAL (Secure Access Link)
- Midsize Enterprise applications which include:
  - Avaya Aura® Application Enablement Services
  - Avaya Aura® Communication Manager/Communication Manager Messaging
  - Avaya Aura® Presence Services
  - Avaya Aura® Session Manager
  - Avaya Aura® System Manager
  - Avaya Aura® Utility Services

The following diagram shows the high-level topology for a Midsize Enterprise system.



Avaya Aura® on VMware

Avaya Aura® Virtualized Environment integrates real-time Avaya Aura® applications with the VMware® virtualized server. Using Virtualized Environment, you can install Avaya Aura® collaboration features on the VMware or vCenter infrastructure.

The virtual application is packaged as Open Virtualization Appliance (OVA), which includes the following:

- Guest operating system
- Operation application image, except for Presence Services
- VMware tools package 5.0 or later
- Footprint resource parameters for successful application use
- Configuration details of VMXNET3 and NTP for VMware best practices

You can deploy the following applications in Virtualized Environment by using vSphere client or vCenter:

- System Manager
- Application Enablement Services
- Communication Manager
- Session Manager
- Utility Services
- Presence Services

Important:

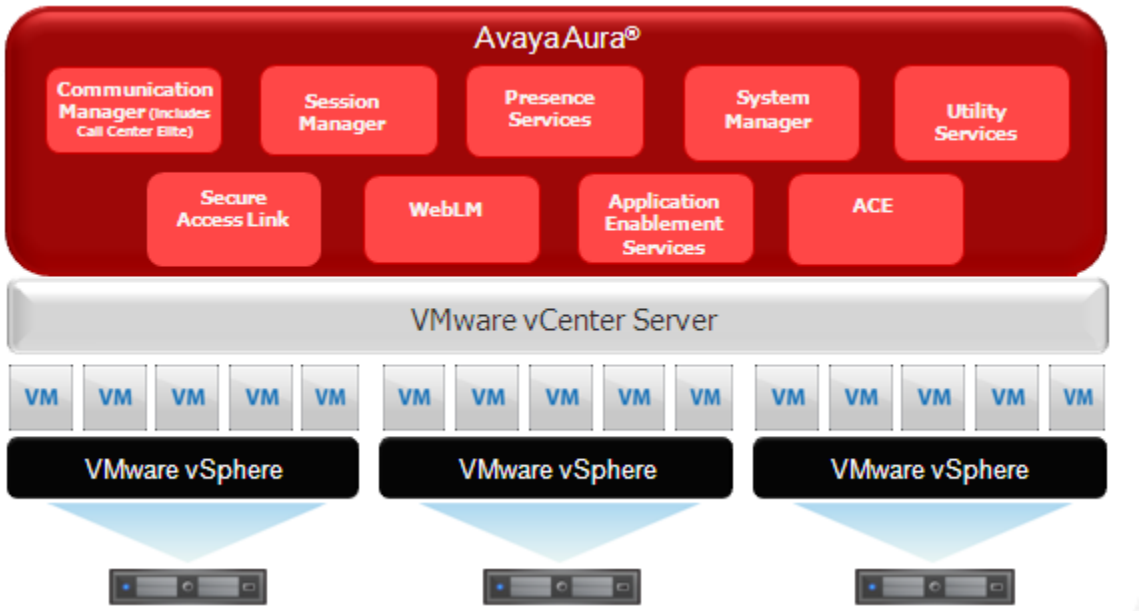
Deploy the Communication Manager Simplex OVA and then administer the Communication Manager Simplex OVA as a survivable remote server. However, you cannot administer a core Session Manager OVA as a remote survivable server. Deploy the Session Manager OVA as a core Session Manager OVA only.

Related topics:

Avaya Aura Virtualized Environment on page 28

Avaya Aura® Virtualized Environment

The following diagram shows the Avaya Aura® applications supporting virtualization with VMware.



The Avaya Aura® applications are installed as separate virtual machines. The VMware virtualization platform, VMware vSphere, supports the virtual machines. The VMware vCenter Server management system manages the applications as virtual machines and provides management and implementation features in addition to the standard System Manager features.

Benefits of deploying Avaya Aura® Core

Improve business agility

SIP architecture with centralized management and control provides businesses the agility to take advantage of new networking capabilities, deploy new applications, and deliver new levels of customer service.

Reduce costs

Avaya Aura® solution helps in effective handling of traffic and PSTN usage with a single enterprise-wide dial plan and intelligent routing policies. Administrative costs are reduced with simpler management and infrastructure.

Increase productivity

The Avaya Aura® platform enables easy deployment of services to users, independent of location or network connection. Employees can use unified communications tools to work effectively.

Improve customer service

With the Avaya Aura® platform, workers can have improved access to services, information, and expertise.

Centralize user administration

System Manager provides a centralized location for adding users in Communication Manager and Session Manager.

Integrate multi-vendor and business application

Customers can easily integrate the Avaya Aura® solution with the third-party applications.

Improve scalability

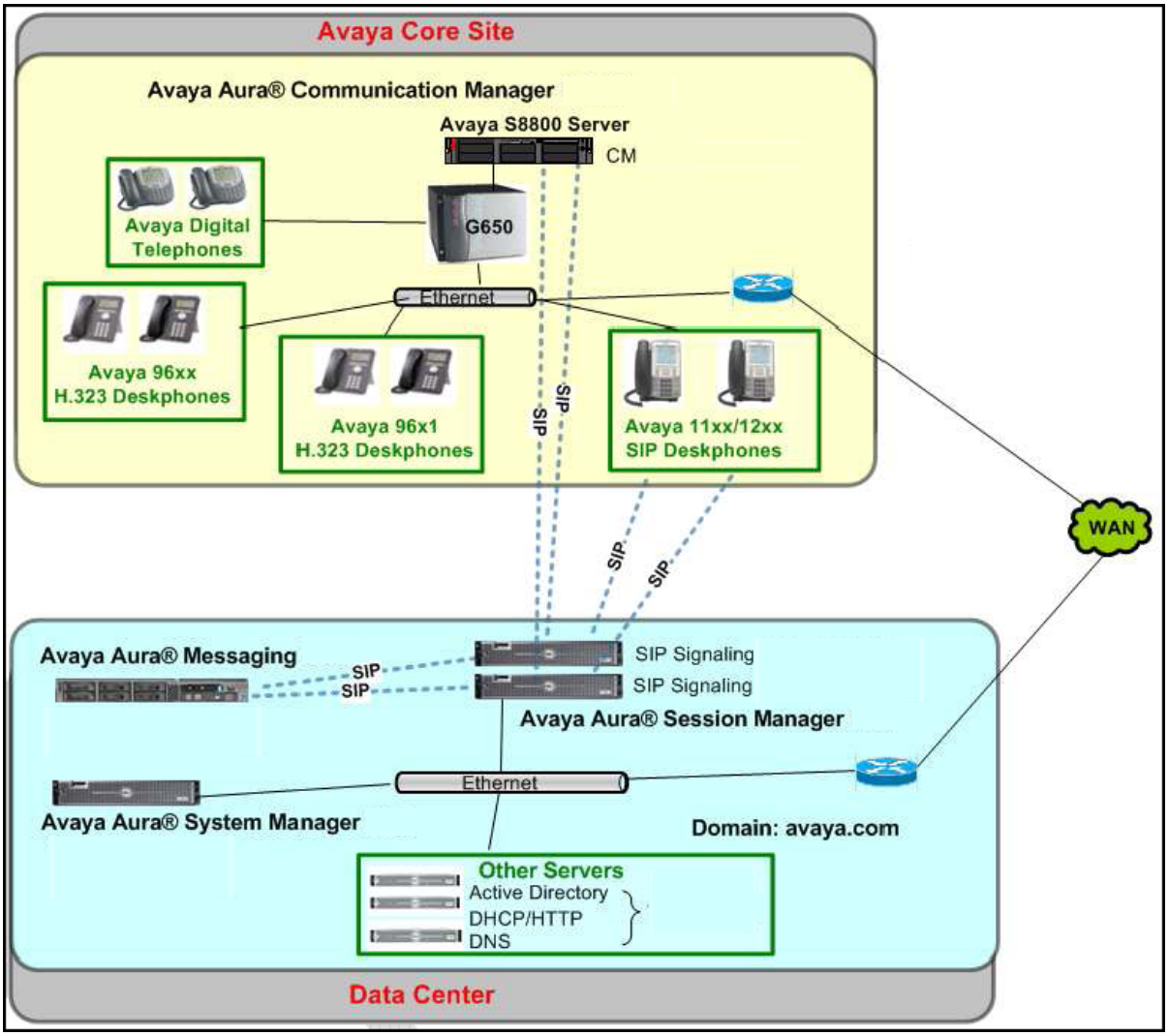
The Avaya Aura® platform provides support for up to 24,000 IP endpoints for each Communication Manager instance and support for up to 100,000 endpoints on 10 Session Manager instances.

Chapter 3: Reference configurations

This chapter covers sample configurations that can be deployed in customer environment. The sample configurations can be integrated with third-party applications for complete network interconnections.

Messaging

This configuration uses Session Manager, Communication Manager, Messaging, and Avaya 1100 Series and 1200 Series IP deskphones. The deskphones have the SIP firmware installed. Two Session Managers are deployed so that one Session Manager can serve as backup for the other in case of a network or Session Manager failure.



In this configuration, Avaya 1100 Series and 1200 Series IP deskphones are configured as SIP endpoints. These endpoints register to Session Manager and use Communication Manager for feature support.

Note:

Since these telephones were originally developed under the Nortel brand, they do not currently support the Avaya Advanced SIP Telephony (AST) protocol implemented in Avaya 9600 Series or Avaya 9601 Series SIP deskphones. However, Communication Manager and Session Manager have the capability to extend some advanced telephony features to non-AST telephones.

Communication Manager Evolution Server also supports Avaya 2420 Digital telephones and Avaya 9600 Series and 9601 Series IP deskphones running H.323 firmware. Communication Manager is connected over SIP trunks to Session Manager servers. Communication Manager uses the SIP Signaling network interface on each Session Manager.

Messaging consists of an Avaya Aura® Messaging Application Server (MAS) and Avaya Message Storage Server (MSS) running on a single Avaya S8800 server. Messaging is also connected over SIP trunks to both Session Managers. All users have mailboxes defined on Messaging which they access through a dedicated pilot number.

All inter-system calls are carried over these SIP trunks. Calls between stations are re-directed to Messaging and the calling party can leave a voicemail message for the appropriate subscriber.

The following equipment and software are used for the sample configuration.

Component	Software version
Session Manager on S8800 server	Release 6.1
System Manager on S8800 server	Release 6.1
Avaya Aura® Messaging on single Avaya S8800 server	Release 6.1, SP0 R4
Avaya 1100 Series IP Deskphones (running SIP firmware)	Release 6.0.1, SP5
Avaya 1100 Series IP Deskphones (running SIP firmware)	FW: SIP 4.03.07
Digital Telephones (DCP)	N/A
9600 Series IP Deskphone (H.323)	FW: R3.1, SP1
9601 Series IP Deskphone (H.323)	FW: R6.0, SP1

Conferences

Avaya Aura® Conferencing 7.0 consists of Application Server, Media Server, and Web Conferencing Server. The sample configuration includes Avaya Aura® Conferencing 7.0, Communication Manager 6.2, and Session Manager 6.2. Avaya Aura® Conferencing 7.0 integrates with the customer private branch exchange (PBX) environment and migrates PBX clients to IP and SIP services.Session Manager routes SIP sessions across a TCP/IP network with centralized routing policies. The SIP endpoints register to Session Manager. Communication Manager works as an evolution server for SIP endpoints. The configuration uses SIP trunking.

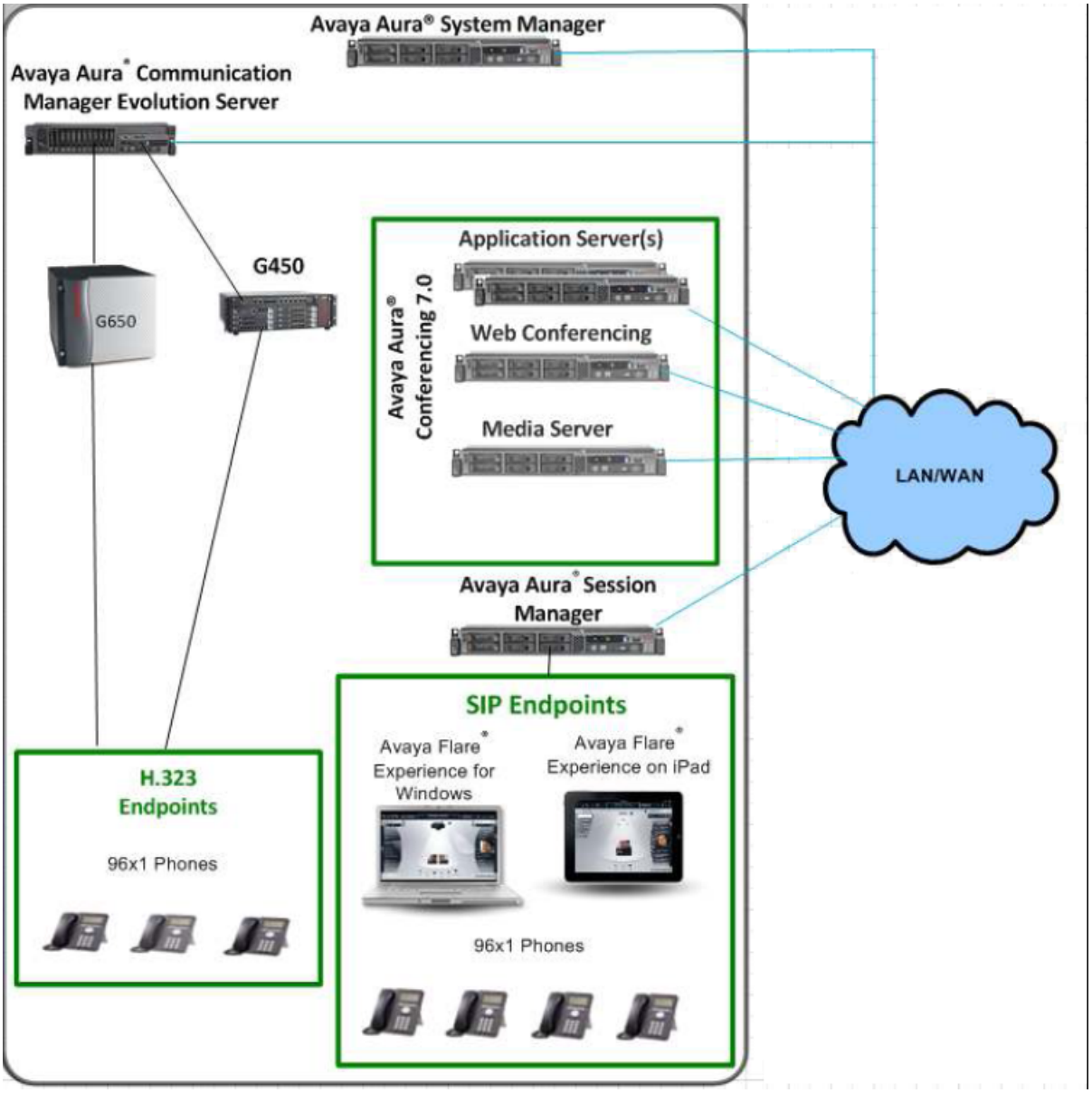


Figure 2: Avaya Aura® Conferencing 7.0

The sample configuration is a large layout configuration. Avaya Aura® Conferencing large layout configuration consists of a single pair of redundant application servers. The application servers provide the following capabilities: element management, database management, application service, and accounting. The Avaya Media server provide media resources to the configuration. This layout allows for system expansion beyond the basic layout.

Avaya Aura® Conferencing 7.0 Application Server is a SIP collaboration server. The Avaya Media server enables audio mixing of conferences. The Web Conferencing server provides content sharing functionality from Avaya Flare® Experience clients and Collaboration Agent. System Manager is used to manage Session Manager and Avaya Aura® Conferencing 7.0.

Avaya Aura® Conferencing 7.0 connects to Session Manager through an entity link. Session Manager connects to Communication Manager Evolution Server 6.2 through SIP trunks.

Component	Software version
Avaya Aura® Conferencing7.0 HP ProLiant DL360 G7 • Application Server • Media Server • Web Conferencing Server	7.0
Communication Manager	6.2
System Manager	6.2
Session Manager	6.2
Avaya G650 Gateway	• Hardware 15 Firmware 51 • Hardware 01 Firmware 38 • Hardware 08 Firmware 55
Avaya G450 Gateway	Hardware 1 Firmware 31.20.1
Avaya 96x1 IP telephone – SIP	6.2
Avaya 96x1 IP telephone – H.323	6.2
Avaya Flare® Experience on iPad – SIP	1.0
Avaya Flare® Experience for Windows – SIP	1.0

Survivability

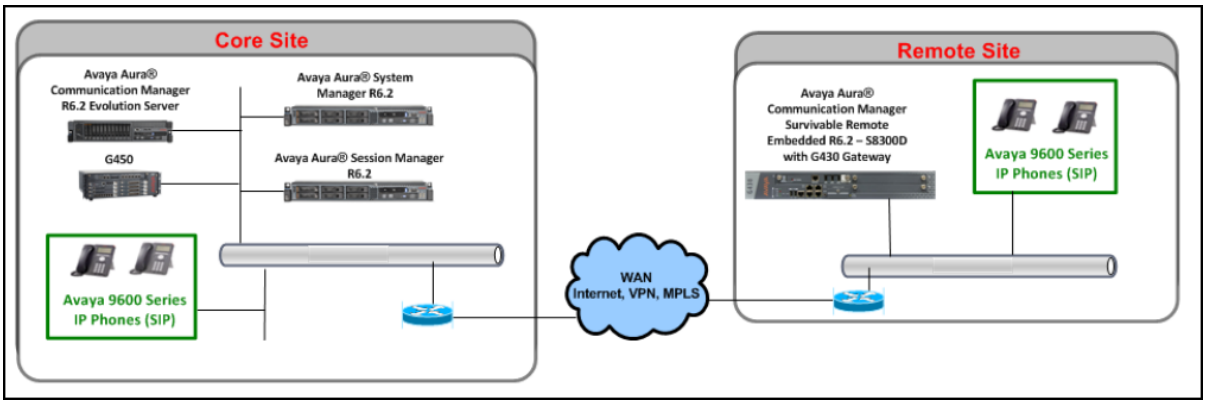


Figure 3: Avaya Aura® with Embedded Survivable Remote

The Embedded Survivable Remote solution supports survivable local call processing and SIP routing for a branch when the connection with the core site fails. Branch Session Manager provides a SIP-enabled branch survivability solution. When the core Session Manager is unreachable, SIP phones receive Communication Manager features from Avaya Aura® that is installed on the Embedded Survivable Remote server. Branch Session Manager provides services to the SIP endpoints when the connection with the core site is fails.

The sample configuration consists of the Embedded Survivable Remote server, Branch Session Manager, and an Avaya Aura® 6.2 infrastructure.

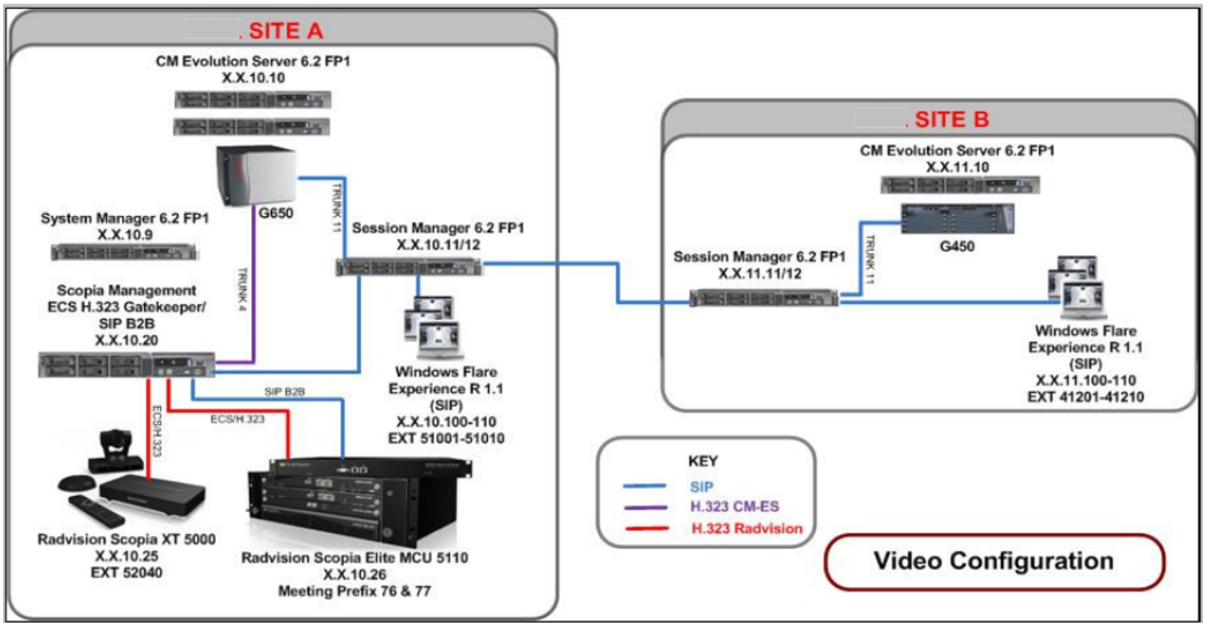
The embedded survivable remote template is installed on an Avaya S8800D server with G430 and G450 Branch Gateway.

The site where the embedded survivable remote server is installed includes:

- Session Manager
- Communication Manager
- Utility Services

Component	Software version
• Communication Manager • G450 Branch Gateway	• Communication Manager Release 6.2 and later • G450 Branch Gateway Firmware 31.20.1
• Communication Manager • Survivable Remote embedded with Session Manager • G430 Branch Gateway	• Communication Manager Release 6.2 and later • Branch Session Manager Release 6.2 and later • G430 Branch Gateway Firmware 31.20.1
System Manager on System Platform	• System Manager Release 6.2 and later • System Platform Build 6.2.0.0.27
Session Manager	Release 6.2 and later
Avaya 96x1 Series IP deskphone with Avaya one-X® SIP firmware	Release 6.2, build 44

Video conferencing



The Radvision Scopia® XT 5000 series endpoint provides the following video-conferencing capabilities:

- HD 1080p video at 60 frames per second (fps)
- HD continuous presence video conferences with in-built MCU

Scopia® Management manages video conferencing, infrastructure, and call control applications such as gatekeepers and SIP agents.

You can deploy Scopia® Management within a distributed environment to provide scalability and redundancy. Scopia® Management includes an internal ECS H.323 gatekeeper that manages multimedia communication networks.

Solution deployment

The sample configuration includes two separate sites, Site A and Site B.

Site A consists of Communication Managerduplex server running as an evolution server. The Communication Manager template is installed on S8800 Server and the platform used is System Platform. The server is configured with G650 Gateway. Site A has System Manager installed on System Platform. The hardware on which System Platform is installed is S8800 Server. A single Session Manager application is installed on S8800 Server.

Scopia® Management is installed on a Microsoft Windows 2008 Enterprise Server R2 operating system as a single server deployment. Scopia® Management server also contains

the internal Radvision ECS gatekeeper. Radvision Scopia® XT 5000 endpoint at this location is registered with the Radvision ECS gatekeeper.

Site B consists of a Communication Manager simplex server running as an evolution server and is installed on System Platform. The server is configured with G450 Branch Gateway. Session Manager is installed on S8800 Server. Site A System Manager is used to manage Communication Manager and Session Manager.

Equipment/software	Release/version
Session Manager on Avaya S8800 Server	Release 6.2 FP2
System Manager on System Platform	Release 6.2 FP2
Communication Manager Evolution Server on System Platform	Release R.6.0.1
Scopia® Management Scopia® ECS	Release 8.0.0.0.489 Release 7.7.0.0.25
Radvision Scopia® XT5000 (H.323)	Release 3.1.0.37
Avaya Flare® Experience on Windows (SIP)	Release 1.1.0.5 Build 85

Avaya Aura® in a virtualized environment

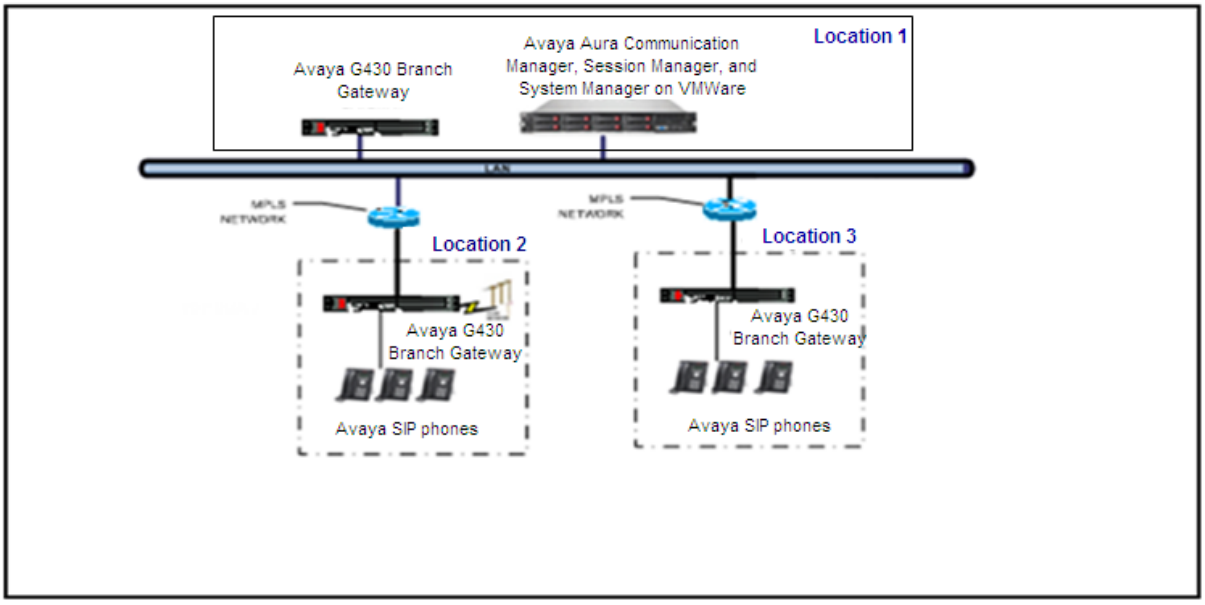


Figure 4: Avaya Aura® on VMware

The Avaya Aura® core setup is in the head office, Location 1. The head office connects to Location 2, a branch office, which is the parts warehouse. Location 2 requires a new setup for

150 users. Location 2 uses SIP endpoints. The network environment uses POE. The communication system requires a 30–channel ISDN PRI trunk for inbound and outbound calling. The branch office connects over WAN to the head office.

The second branch office, Location 3, requires a setup to support up to 40 users. The branch office uses SIP endpoints and a 30–channel ISDN PRI trunk for inbound and outbound calls. The branch office connects over WAN to the head office.

Proposed solution

Location 1

The Location 1 datacenter consists of Communication Manager, Session Manager, and System Manager. Virtualized Environment is on customer-provided hardware and VMware. The servers are installed on VMware. Location 1 uses one G430 Branch Gateway for media resources. The Location 1 system hosts all the licenses and provides services and control over WAN to Location 2 and Location 3. The Location 1 system has licenses for 190 users, 150 for Location 2 and 40 for Location 3. 20 EC-500 licenses are available as a startup.

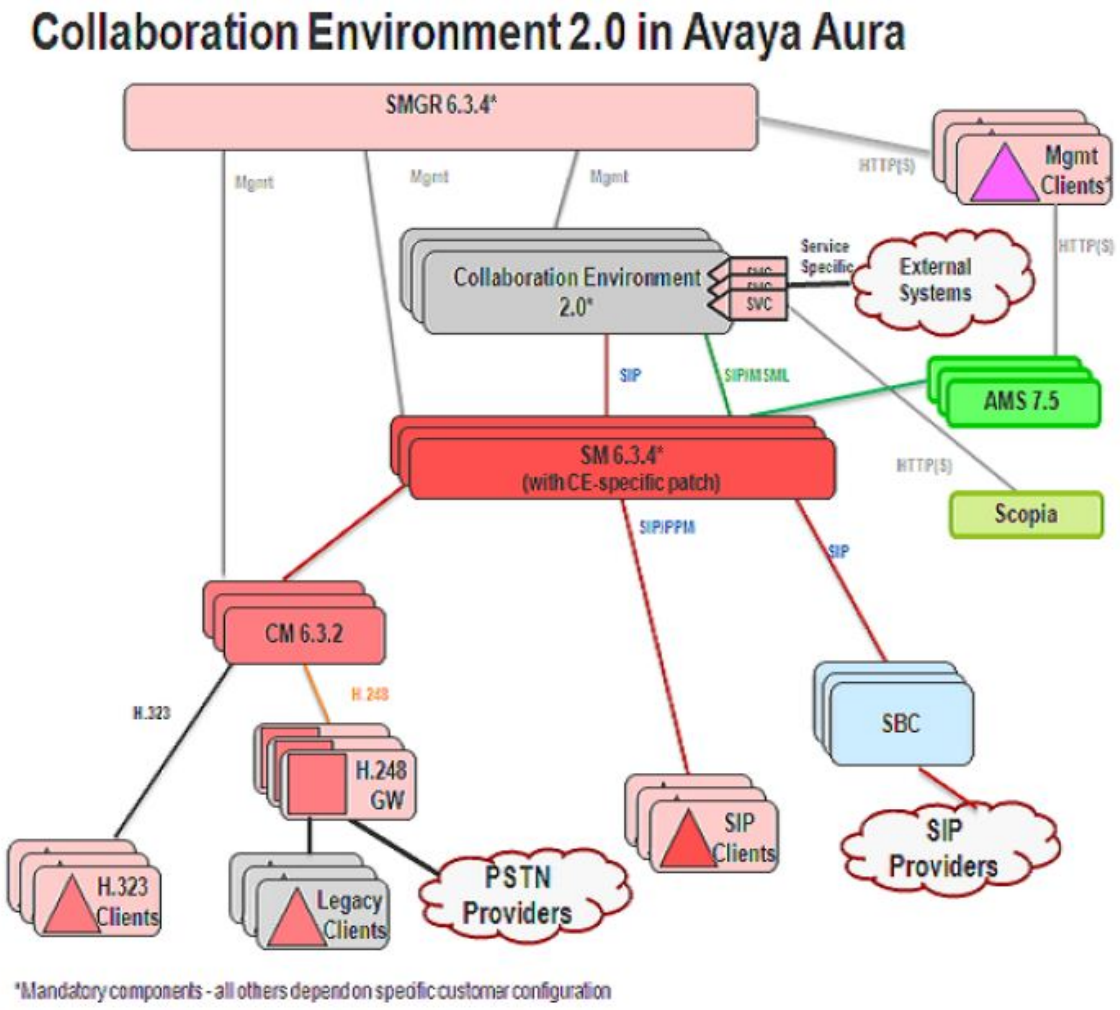
Location 2

Location 2 uses G430 Branch Gateway for media resources. The branch office uses 150 Avaya 9608 IP and SIP telehones and a 30-channel ISDN PRI card for PSTN connectivity. All endpoints work on POE and do not require local power supply. The G430 Branch Gatewayconnects to head office over WAN. The system uses Branch Session Manager and Survivable Remote in case of connectivity failure with head office.

Location 3

Location 3 uses G430 Branch Gateway for media resource and local connectivity. Location 2 uses 40 Avaya 9608 IP and SIP Phones. Location 3 uses a 30-channel PRI card for PSTN connectivity. All endpoints use POE and do not require local power supply. G430 Branch Gateway connects over WAN to Avaya servers in the head office . The setup uses the standard survivability capabilities with limited survivability features.

Avaya Aura® Collaboration Environment



Solution overview

The Avaya Aura® Collaboration Environment server runs in the Avaya Aura® environment. It complements and expands the core communication capabilities of Session Manager and Communication Manager. System Manager is used to manage Collaboration Environment.

Collaboration Environment interoperates with Communication Manager 6.3.2.

Traditional H.248 gateways provide access to the PSTN and support for H.323 and legacy endpoints. Connection to SIP service provider trunks is provided via Session Border Controller to Session Manager.

All incoming and outgoing PSTN calls use Call Intercept services that run on Collaboration Environment, regardless of the type of endpoint and the type of trunk. For ISDN trunks,

Communication Manager routes outbound PSTN calls first to Session Manager and then to the ISDN trunk. Similar configuration is required for incoming calls over an ISDN trunk. Station-to-station calls cannot invoke Call Intercept services even if the endpoints are SIP endpoints.

Collaboration Environment is deployed in a VMware Virtualized Environment.

Chapter 4: IP Office branch solution with Avaya Aura®

IP Office Branch Solution

An IP Office enterprise branch deployment can be implemented on an IP Office 9.0 standard mode system. The IP Office system can be installed as an independent, standalone branch, or be connected to the Avaya Aura® network and migrated to a Distributed, Centralized, or Mixed enterprise branch to provide specific features and applications to meet the needs of individual employees in each branch location.

In addition to centralized SIP endpoints, IP Office can concurrently support other IP and TDM endpoints for a community of centralized users and IP Office users in the same branch. Ideal for enterprises requiring applications in customer data centers or in the branch itself, an IP Office branch can effectively deliver a range of communication tools without complex infrastructure and administration.

IP Office branch solution topology

IP Office branch solution can be deployed with Avaya Aura® in distributed, centralized, and mixed enterprise branch configurations.

Distributed branch deployment

In a distributed enterprise branch deployment, all users are IP Office users. The IP Office users obtain telephony services from the local IP Office and not from Avaya Aura®. The IP Office systems can be connected to Session Manager and administrators can obtain centralized management services through System Manager. The enterprise can choose to connectIP Office users in this deployment option to an IP Office voice mail system, such as Embedded Voicemail or VoiceMail Pro, or a centralized voice mail system, Messaging or Modular Messaging. IP Office users can also have access to some centralized Avaya Aura® applications and services.

Centralized branch deployment

Centralized users must be configured on the Session Manager, Communication Manager, and IP Office. A centralized user must be configured on Session Manager and Communication

Manager as a SIP user. On IP Office, the centralized user must have either a SIP extension or an analog extension.

Mixed enterprise branch deployment

An enterprise branch with both centralized users and IP Office users. Centralized users obtain their telephony services from Avaya Aura® and the IP Office users obtain their telephony services from the local IP Office, as in the case of the distributed branch deployment.

All users in this deployment option must use a centralized voice mail system: Avaya Aura® Messaging or Avaya Modular Messaging.

IP Office branch solution architecture

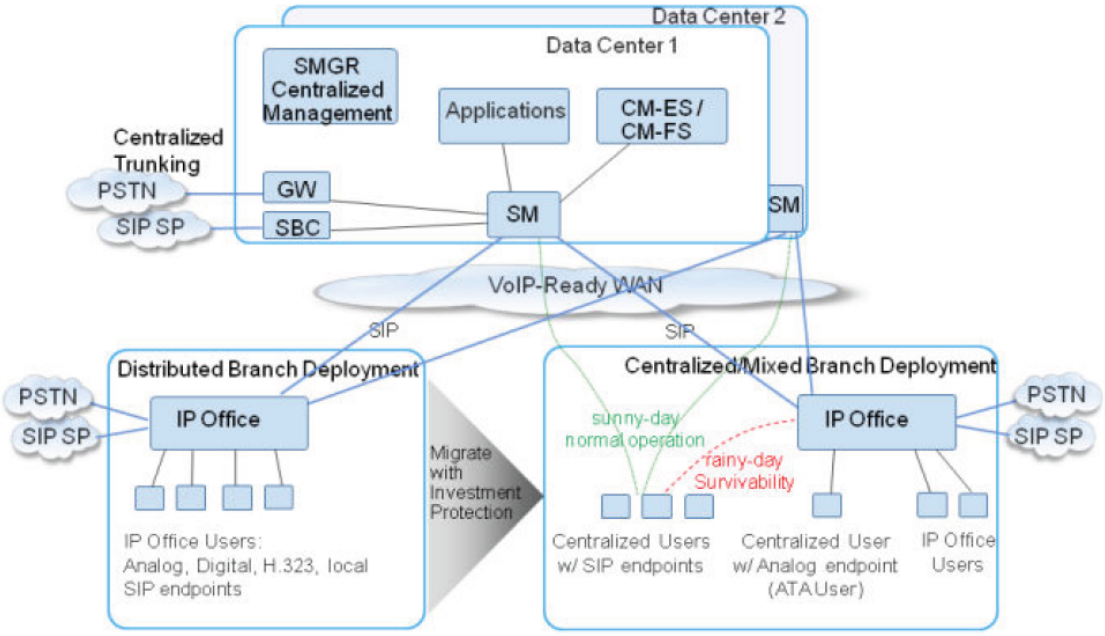


Figure 5: IP Office branch solution architecture

The following table describes how the applications and services in a branch office solution interact with each other.

Component	Description
IP Office branch solution	This solution includes hardware and software components. Each branch consists of an IP Office system.
Main Avaya Aura® network	• System Manager provides administrative functions that administrators can use to easily manage all users

Component	Description
	and IP Office systems in the enterprise. In a distributed, mixed, or centralized environment, IP Office branches connect to the IP Office server. **Note:** System Manager does not manage the following applications: Voicemail Pro, Avaya one-X® Portal for IP Office, CCR, and UCM. • Session Manager connects branches to each other and to other applications and services in the enterprise center. For IP Office users in distributed and mixed deployment environments, Session Manager acts as a SIP proxy to route SIP sessions to and from the SIP connections to IP Office. For centralized users, Session Manager is also the main interface that handles user registration and routing of calls. • Communication Manager provides telephony services to centralized users through Session Manager. • Avaya WebLM is included within System Manager and provides centralized licensing management. • Secure Access Link (SAL) provides remote access and alarm reception capabilities. The SAL Gateway is installed on a Red Hat Enterprise Linux host in the customer network and acts as an agent on behalf of several managed elements. All communication uses encapsulated Hypertext Transfer Protocol Secure (HTTPS). • Other centralized services such as conferencing and messaging are available to centralized users. Some of these services are also available to IP Office users in distributed and mixed branch environments.
Supported centralized endpoints	The IP Office branch solution supports the following centralized SIP endpoints: • Avaya 9600 series phones - 9620 SIP 2.6 - 9630 SIP 2.6 - 9640 SIP 2.6 - 9650 SIP 2.6 - 9601 SIP 6.2.2 - 9608 SIP 6.2.2

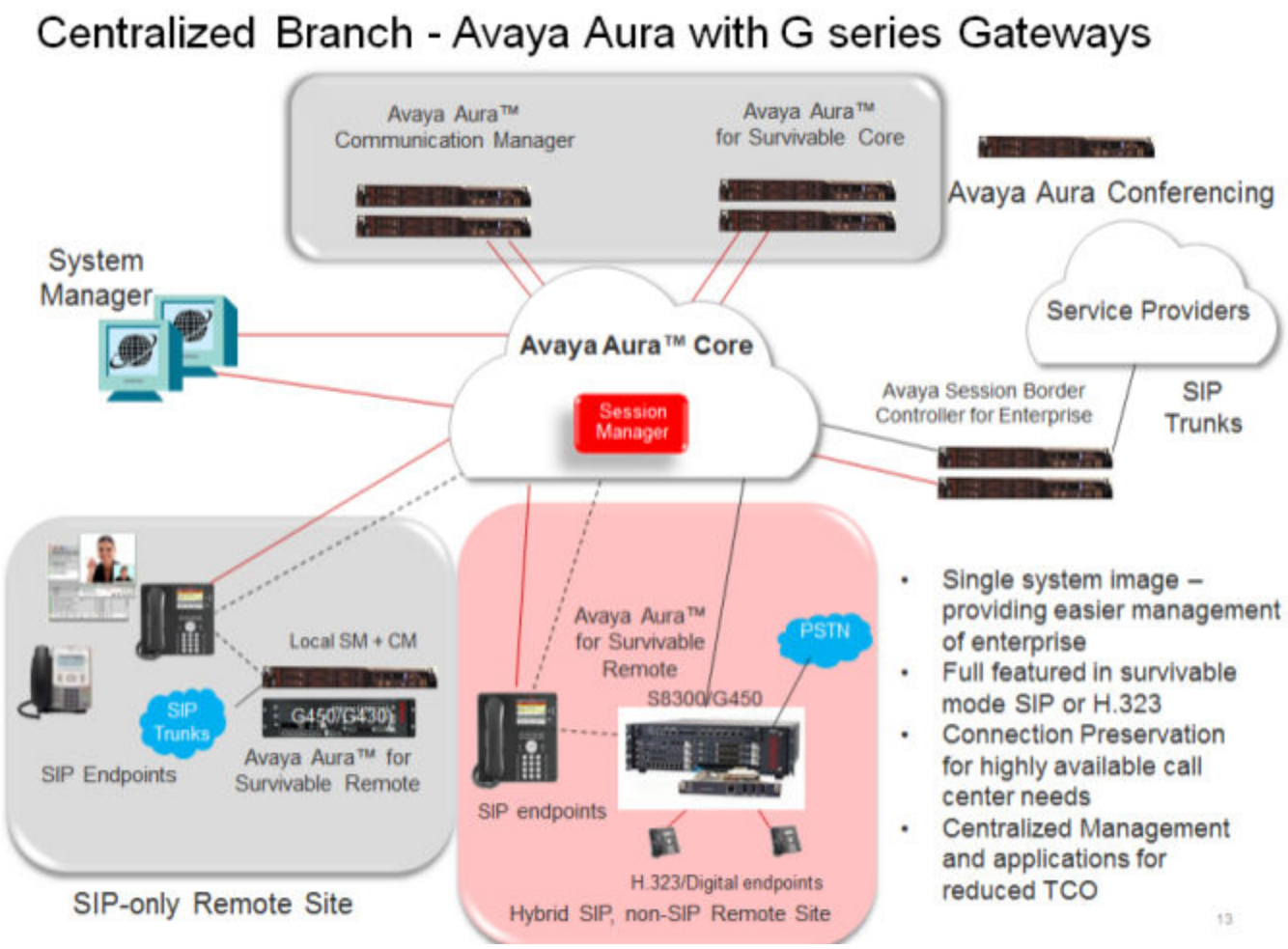
Component	Description
	- 9611G SIP 6.2.2 - 9621G SIP 6.2.2 - 9641G SIP 6.2.2 • Avaya one-X® Communicator SIP 6.2 (audio only) • Radvision video endpoints

Avaya Aura® Branch solution with G series gateways

The Avaya Aura® Branch solution with G series gateways is ideally suited for enterprises that have invested in a network connecting branches. The following table summarizes the number of users supported by the G series gateways.

G series gateway	Number of users
G430 gateway	Up to 150 users
G450 gateway	Up to 450 users

The following image shows the topology of this solution.



Key differences between IP Office Branch and Avaya Aura® Branch with G-series gateways

There are similarities and differences between the IP Office Branch solution and the Avaya Aura® Branch solution with G-series gateways. The differences are summarized below.

- The IP Office solution offers flexible deployment options, IP Office services, and cost advantages that are not available with the Avaya Aura® Branch solution.
- IP Office is not an H.248 gateway under CM control. IP Office is a telephony system or a SIP gateway connecting to Avaya Aura® Session Manager.

- The IP Office Branch solution is not limited to 250 gateways per Avaya Aura® Communication Manager. Up to 2000 IP Office branches can connect to Avaya Aura® Session Manager with a single core CM-ES or CM-FS.
- Centralized users in the IP Office Branch solution cannot access many advanced features available to users in the Avaya Aura® Branch solution with G-series gateways. Differences in the IP Office solution include:
  - IP Office Branch offers basic survivability for Centralized users with limited features in rainy-day. With the Avaya Aura® solution, users get consistent features in normal and survivable modes.
  - IP Office does not support IGAR. This is a Communication Manager feature to send media over the PSTN instead of the WAN when the Session Manager Call Admission Control limit is reached.
  - Calling and basic features possible between Centralized users and IP Office users in a Mixed branch, but no group features such as bridging or Call Pickup.
  - No synchronization of provisioned or dynamic data between the central Communication Manager and IP Office, except for Centralized user basic configuration fields (such as name, extension, and password) in Avaya Aura® System Manager.
  - Short service disruption of up to 3 minutes for Centralized users after failover occurs.

Chapter 5: Hardware and software components

Hardware components

The Avaya Aura® solution includes supported hardware. This hardware includes servers, gateways, desk telephones, and video devices.

Servers

The Avaya software applications are installed on the following supported servers:

- Avaya S8300D Server, an embedded server that resides in the G430 and G450 Branch Gateways.
- Avaya S8800 Server, a stand-alone server that comes in a 1U or 2U configuration.
- HP ProLiant DL360 G7, a stand-alone server that comes in a 1U configuration.
- HP ProLiant DL360p G8, a stand-alone server that comes in a 1U configuration.
- Dell™ PowerEdge™ R610, a standalone server that comes in a 1U configuration.
- Dell™ PowerEdge™ R620, a standalone server that comes in a 1U configuration.

Gateways

The Avaya Aura® solution uses the following supported gateways:

- Avaya G650 Media Gateway, a traditional gateway that houses TN circuit packs and is used in port networks
- Branch gateways
  - Avaya G430 Branch Gateway: a gateway that provides H.248 connectivity and houses media modules.
  - Avaya G450 Branch Gateway: a gateway that provides H.248 connectivity and houses media modules.
- Avaya B5800, a SIP Gateway
- Avaya M3000 Media Gateway, a high-density trunk gateway that provides SIP connectivity

Circuit packs and media modules

Communication Manager often uses port networks made up of Avaya G650 Media Gateways that houses TN circuit packs. The following circuit packs support IP connectivity:

- TN2312BP IP Server Interface (IPSI), with Communication Manager on a server provides transport of control (signaling) messages.
- TN799DP Control LAN (C-LAN), provides TCP/IP connectivity over Ethernet or PPP to adjuncts
- TN2302AP IP Media Processor (MedPro), the H.323 audio platform
- TN2501AP voice announcements over LAN (VAL), an integrated announcement circuit pack that uses announcement files in the .wav format
- TN2602AP IP Media Resource 320, provides high-capacity voice over Internet protocol (VoIP) audio access

Communication Manager also uses branch gateways in lieu of or in addition to port networks. The G430 and G450 Branch Gateways house media modules. The following media modules support IP connectivity:

- MM340 E1/T1 data WAN Media Module, provides one WAN access port for the connection of an E1 or T1 data WAN
- MM342 USP data WAN Media Module, provides one USP WAN access port

Note:

Avaya no longer sells MM340 and MM342 but if an existing customer already has them, they can be used in the G430 and G450 Branch Gateways.

For more information on circuit packs and media modules, see *Avaya Aura® Communication Manager Hardware Description and Implementation* (555-245-207).

Telephones, endpoints, and video devices

The Avaya Aura® solution supports the following Avaya and third-party IP (H.323/H.320) and SIP telephones and video devices:

- Avaya IP telephones and devices
  - Avaya IP deskphone series
  - Avaya one-X deskphone series
  - Avaya 1600/9600–series specialty handsets
  - Avaya 4600–series IP telephones
  - Avaya IP conference telephones
  - Avaya 1000–series video devices
  - Avaya A175 Desktop Video Device with the Avaya Flare® Experience
  - Avaya Flare® Communicator for iPad Devices
- Third-party telephones and video devices
  - Polycom VSX/HDX endpoints

- Tandberg MXP endpoint

• Scopia® endpoints

- Scopia® XT Telepresence
- Scopia® XT5000 Room System
- Scopia® XT4200 Room System
- Scopia® XT Meeting Center Room System
- Scopia® Control
- Scopia® XT Executive 240
- Scopia® Video Gateway for Microsoft Lync

For more information on telephones and video devices, see *Avaya Aura® Communication Manager Hardware Description and Implementation* (555-245-207) and documentation on the individual telephones and video devices.

Software components

The Avaya Aura® solution consists of several Avaya software applications in addition to the core components. The following products are part of the Avaya Aura® solution:

- Acme Session Border Controller
- Avaya Session Border Controller for Enterprise
- Avaya Aura® Conferencing
- Avaya Communication Server 1000
- Avaya Video Conferencing Manager

Avaya Aura® supports several software mobility endpoints including:

- Extension to Cellular (EC500)
- H.323 and SIP versions of Avaya one-X® Communicator
- Avaya A175 Desktop Video Device with the Avaya Flare® Experience
- Avaya one-X® Client Enablement Services
- Avaya one-X® Mobile SIP for iOS and Android
- Avaya Flare® Communicator for iPad Devices
- Avaya Flare® Communicator for Windows

Avaya Aura® core also supports third-party applications such as:

- Polycom CMA
- Polycom VBP-E
- Polycom HDX 6000, 7000, and 8000 Series Room Telepresence Solutions
- Polycom RMX 1000
- Polycom RMX 1500
- Polycom RMX 2000
- Polycom RMX 4000
- Polycom VVX1500
- Polycom Gatekeepers

For more information, see *Avaya Aura® Communication Manager Hardware Description and Reference*, 555-245-207.

Chapter 6: Typical upgrade paths

Session Manager upgrade path

Upgrade paths to upgrade from various releases of Session Manager to Release 6.3.8:

Release	Requirement
6.3.x	Feature Pack 4 service pack update.
6.2.x	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack
6.0.1 and subsequent service packs	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack
5.2.x	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack

Note:

You cannot directly upgrade servers running earlier versions to Release 6.2 Feature Pack 4. You must first upgrade to one of the releases in the preceding list before upgrading to Session Manager 6.2 Feature Pack 4.

System Manager upgrade path

To upgrade to System Manager Release 6.3.8, you must maintain the existing paths available to System Manager 6.3.0 and then install the System Manager 6.3.8 service pack. You can upgrade to the standalone template of System Manager Release 6.3.8 from the following releases:

- System Manager Release 6.0 Service Pack 1 or Service Pack 2
- System Manager Release 6.1
- System Manager Release 6.2
- System Manager Release 6.3

Note:

You can perform direct upgrades only from the latest service packs.

To upgrade from releases before 6.0 Service Pack 1, you must follow the upgrade path to System Manager Release 6.0 Service Pack 1. For more information about upgrading, see *Upgrading Avaya Aura® System Manager on System Platform* and *Upgrading Avaya Aura® System Manager on VMware in Virtualized Environment*

Presence Services upgrade path

Upgrade paths to upgrade to Presence Services Release 6.2.4:

Release	Requirement
6.2.x	Feature Pack 4 service pack update
6.1.x	Direct upgrade to 6.2.x and then installation of Feature Pack 4 service pack
6.0.x	Direct upgrade to 6.2.x and then installation of Feature Pack 4 service pack
5.2.x	Direct upgrade to 6.2.x and then installation of Feature Pack 4 service pack

Communication Manager upgrade path

The following table provides the supported upgrade paths from various releases of Communication Manager to Communication Manager Release 6.3.6:

Release	Requirement
5.1.x	Upgrade to Release 5.2.1 and then install a preupgrade service pack before you upgrade to Release 6.3.6.
5.2.1	Install a preupgrade service pack before you upgrade to Release 6.3.6.
6.0.x, 6.2, or 6.3.x	Upgrade software-only to Release 6.3.6.

Note:

- You cannot upgrade some servers to Release 4.0.5 or Release 5.2.1 directly. You must upgrade to Release 4.0.5 or Release 5.2.1 on a supported server before you complete the Communication Manager upgrade to Release 6.3.6.
- You can also upgradeCommunication Manager from earlier releases to Release 6.3.6 on VMware vSphere™ 5.0, 5.1, or 5.5 Virtualized Environment.

Application Enablement Services upgrade path

Upgrade paths to upgrade from various releases of Application Enablement Services to Release 6.3.3:

Release	Requirement
6.3.x	Feature Pack 4 service pack update
6.2.x	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack
6.1.x	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack
5.2.x	Direct upgrade to 6.3.0 and then installation of Feature Pack 4 service pack

Glossary

Application Enablement Services	A set of enhanced telephony APIs, protocols, and Web services that are available to developers. These capabilities support access to the powerful call processing, media, and administrative features available in Communication Manager.
Call Detail Recording	A feature of some telephone systems that allows the system to collect and record information on outgoing and incoming telephone calls and send this information to a printer or a Call Detail Recording Utility (CDRU).
Communication Manager	A key component of Avaya Aura®. It delivers rich voice and video capabilities and provides a resilient, distributed network for media gateways and analog, digital, and IP-based communication devices. It includes advanced mobility features, built-in conference calling, contact center applications and E911 capabilities.
E1	A European standard for digital transmission service that carries traffic at a rate of 2.048 MBps.
ESXi	A virtualization layer that runs directly on the server hardware. Also known as a *bare-metal hypervisor.* Provides processor, memory, storage, and networking resources on multiple virtual machines.
PLDS	PLDS is an online web-based tool for managing license entitlements and electronic delivery of software and related license files.
Presence server	Presence server collects presence information from various sources, such as Application Enablement Services (AES), Microsoft Office™ Communicator Server (OCS), and eXtensible Messaging and Presence Protocol (XMPP) Server for presentities retrieved from User Data Store and distributes the presence of a given class, such as phone and enterprise IM users.
Presence Services	Presence Services is a single point of presence collection. It supports presence information gathering from a diverse range of sources. This information is aggregated on a per user basis, and then made available to presence aware applications.
Session Manager	A SIP routing and integration tool that is the core component within the Avaya Aura® solution.

Session Border Controller	A Session Border Controller (SBC) is a network equipment that controls real-time session traffic between networks. SBCs facilitate the transmission of real-time session traffic outside a NAT device or firewall boundaries. SBCs secure voice and video communications, presence information, and instant messaging. SBCs also safeguard SIP signaling elements against threats and data overload.
System Manager	A common management framework for Avaya Aura® that provides centralized management functions for provisioning and administration to reduce management complexity.
virtual appliance	A virtual appliance is a single software application bundled with an operating system.
vCenter Server	An administrative interface from VMware for the entire virtual infrastructure or data center, including VMs, ESXi hosts, deployment profiles, distributed virtual networking, and hardware monitoring.
VM	Virtual Machine. Replica of a physical server from an operational perspective. A VM is a software implementation of a machine (for example, a computer) that executes programs similar to a physical machine.
vSphere Client	The vSphere Client is a downloadable interface for administering vCenter Server and ESXi.

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